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ABSTRACT

Compiled in this newsletter are activities, viewpoints, reports, extracts from speeches, and book reviews by the International Union for Conservation of Nature and Natural Resources (IUCN). Principal items deal with the 11th General Assembly of the IUCN held September, 1972 in Banff, Alberta, Canada. A general summary of the meeting is reported as well as approval of amendments to the statutes, ratification of new member organizations, and consideration of a proposal for increased membership fees. Excerpts and extracts from keynote speeches are included: (1) the welcome by Honourable Jean Chretien, Minister of Indian Affairs and Northern Development, (2) "The Environmental Challenge to Man and Institutions" by Maurice Strong, Secretary-General of the UN Conference on the Human Environment, (3) address by Harold J. Coolidge, President, IUCN, and (4) address by D. J. Kuenen, President-Elect, IUCN. In addition, concurrent sessions of the 12th Technical Meeting, "Conservation for Development," are reviewed, members of the Executive Board and Commissions are listed, and reviews of seven books are offered. Resolutions from the conference in 23 major areas are printed as a supplement to the Bulletin. (BL)

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IUCN Viewpoint

Conservation for Development

The theme "Conservation for Development" was chosen for the 12th Technical Meeting, just concluded at Banff, Canada, because an interdisciplinary approach and broadened scope are required in the world-wide dialogue between environmentally-concerned experts and those who make decisions affecting the environment. This involves no surrender of any of the basic philosophies which constitute conservation's *raison d'être,* but as an action-oriented discipline based on scientific knowledge, conservation must adapt to changing circumstances.

However much the activities often associated with the word "development" may be deplored, and however much we may want to resist them, the inescapable fact is that our world increasingly will be subjected to changes none of us want to see. Inevitably more and more natural areas will be lost as men struggle to meet their needs for space, food, housing and manufactured goods. This would occur even if population growth rates by some miracle dropped to zero this year in every single nation.

No great foresight is required to see that unless conservation and by this we mean, broadly, the *rational* use of natural resources leading to improved *quality* of life – is made an integral part of all planning for the future, chances are there will be little left to conserve – an unthinkable prospect indeed.

Achievement of *rational* use will not be easy. In fact, unless there are major modifications in the way most people, most social systems, and most governments think about getting a share of the available resources, rational use will not be achieved in a widely useful way and the quality of life will deteriorate.

It is high time, therefore, that conservationists everywhere addressed themselves to the matter of bringing about social, political and economic philosophies and approaches that include full attention to the imperative of rational use – in every aspect of life.

IUCN approached this problem in its 12th Technical meeting, and will continue to direct its full attention – in detail and in broad direction – toward achieving this goal within the areas of its competence as its mandate from the General Assembly.

The Final Report on the European Working Conference on Environmental Conservation Education, held at Rüschlikon, near Zürich, 15—18 December 1971, is now available from the IUCN Secretariat at Morges. The price is US $2 per copy. The Report is in English.

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The Banff General Assembly

The 11th General Assembly of IUCN has now passed into history. In years to come it will, like its predecessors, be known by the name of the town in which it was held. Banff's importance in the succession remains largely for the future to judge, but there can be no doubt that it was successful. Fifty-two nations and six international organizations were represented, and many delegates from national organizations and private individuals were also present, in all, a total of 360 people.

On the first morning, the General Assembly was welcomed by the Honorable Jean Chrétien, Minister for Indian Affairs and Northern Development. He was followed by Maurice Strong, the Secretary-General of the United Nations Conference on the Human Environment, who delivered the Keynote Address on "The Environmental Challenge to Man and Institutions". During this opening session also, an information paper was presented by Dr. Gerardo Budowski on the Current State of World Conservation.

Two further Keynote Addresses were given during the afternoon session: "Conservation in a World of Rising Expectations" by Zafar Futehally and "The Evolving Role of Inter-governmental Agencies in the World's Concern with the Environment" by Sir Robert Jackson.

The Agenda covered two days of General Assembly meetings and three and one half days devoted to sessions of the 12th Technical Meeting. Principal business dealt with elections, consideration of amendments to the statutes, approval of the programme and budget for the next triennium, ratification of new member organizations and consideration of a proposal for increased membership fees. These items are covered in greater detail elsewhere in this Bulletin.

In addition to the Assembly and Technical meetings, a number of open informal discussion groups were formed, which dealt with subjects as diverse as the utilization of marine resources, scientific tourism, animal trade, wolves, and the conservation of tropical rain forests. These aroused considerable interest and at the conclusion of each a written report was produced.

Dr. Douglas Pimlott, President of the Canadian Nature Federation and Chairman of SSC's Wolf Group chaired a well-attended open meeting on arctic problems. Concern was expressed about a number of problems and a full discussion ensued. It may be noted here that IUCN is in the process of forming an Arctic Resources Committee which undoubtedly will interest itself in a number of the topics raised at the Forum.

Finally, an open forum was held to discuss matters pertinent to the Union. It was chaired by Professor I. McTaggart Cowan with the help of numerous assistants. Among the issues discussed at length were: what the Union means to, and does for, its members; the means of making people, particularly students and Friends, feel that they are part of the Union; and ways of ensuring that increasing governmental participation in the affairs of the Union does not have an adverse affect on its independent voice.

Special mention must be made of the warm hospitality of our hosts, the Government of Canada, and of the superb arrangements provided at Banff for the meetings and for the comfort and convenience of delegates. Principal facilities were at the Banff Center, where the entire theatre complex was made available to the Union. These were superior in all respects.

Delegates were delighted by two special social events, an outdoor beef barbecue given by the Canadian Government at the Indian Grounds near the village of Banff, and a wine and cheese party given by the Government of Alberta at the Banff Springs Hotel.

The General Assembly ended with a cordial invitation from the representatives of the Government of Zaire to hold the 12th General Assembly in that country in 1975. This was accepted with enthusiasm.

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The Union's new President

A new chapter in IUCN's history was begun at the final session of the 11th General Assembly on 16 September when Professor Donald J. Kuenen, of the Netherlands, was elected President of the Union. Professor Kuenen is a former Vice-President of IUCN, having been elected at Lucerne in 1966. He was first named to the Executive Board at Nairobi in 1963. He has also served as member, vice-chairman and chairman of the Commission on Ecology.

In private life, Professor Kuenen is Director General of the Research Institute for Nature Management of the Netherlands. His career includes long service at the University of Leiden, as Professor of Zoology, Dean, Rector and Prorector.

Membership Fees

The General Assembly endorsed the suggestion of the Executive Committee that the fees for membership of IUCN should be increased.

The fees were last examined in Lucerne in 1966, when they were adjusted so as to meet about 50% of IUCN expenditure. Now, in 1972, membership fees will meet only about 13% of the basic expenses. Accordingly the Executive Committee decided to recommend to the General Assembly that the scale of membership fees should be examined and augmented to compensate for the effects of inflation, increased living costs, and devaluation of currency.

In practice this means that a broad increase of approximately 50% will be instituted, which will raise the total income from membership fees from $100,000 to $150,000.

The following Resolution was passed by the General Assembly:

Resolution

Whereas the membership fees of non-governmental members have not been raised since the inception of IUCN in 1948;

AND *whereas* the membership fees of State members were last examined in Lucerne in 1966, when adjustments were made designed to meet from membership fees about 50% of IUCN expenditure;

AND *whereas* in 1972, due to devaluation of currency and increasing costs, present membership fees meet only 13% of the IUCN hard-core recurrent expenditure;

AND *whereas* the direct costs of the routine services made available by IUCN to each member exceeds $100 per annum;

The General Assembly resolves:

(1) That membership fees of national organization members be raised to a minimum of $100 per annum with immediate effect;

(2) That membership fees for international organization members be fixed at a minimum of $100 per annum except where IUCN has reciprocal working arrangements with the body concerned;

(3) That each non-governmental member be obliged to assess the extent to which its resources would enable it to pay a larger fee, and to pledge an appropriate sum;

(4) That the amount of fees so pledged by each member organization be published by IUCN and that such amount be modifiable only at a subsequent General Assembly;

(5) That new applicants for membership be required to make a similar assessment and pledge before their membership application is considered;

And further resolves:

That the membership fees of Affiliates be set at a minimum of $50 per annum, and that they be subject to the requirements of self-assessment and pledging described above;

And further resolves:

(1) That the present rates of membership fees for State members be raised to those in the following scale:

Group	*Membership Fee*
1	$ 550
2	1,100
3	1,650
4	2,300
5	3,000
6	3,800
7	4,900
8	6,200
9	7,600
10	9,000

and that these rates become obligatory in 1975;

(2) That in the meantime all State members be urged to adopt these new rates as soon as possible;

And further resolves:

(1) That membership fees for all Agency members be set at a minimum of $100 per annum with immediate effect;

(2) That the membership fees for Agency members of the central government in countries that are not State members be increased so that the total fees for such agencies in any one country amount to one-third of the State membership fee applicable to that country, this to become effective at the next General Assembly if then approved. In the meantime the Agency members concerned be urged to adopt these new rates as soon as possible.

New Member Organizations

Membership of the following Governmental Organizations was ratified by the 11th General Assembly:

Argentina	Instituto de Investigaciones de las Zonas Aridas y Semiáridas
Australia	National Parks and Wildlife Service of South Australia
	Fisheries and Wildlife Department, Victoria
	National Parks Board of Papua and New Guinea
Belgium	Laboratoire pour la Conservation de la Nature, Centre Universitaire Anvers
Brazil	Coordenadoria de Pesquisa de Recursos Naturais, da Secretaria da Agricultura de São Paolo
Bulgaria	Ministère des Forêts et de l'Industrie du Bois en République Populaire de Bulgarie
Canada	Centre for Environmental Biology, Memorial University of Newfoundland
Colombia	Colombian Institute for the Conservation of Nature
	Instituto de Ciencias Naturales de la Universidad Nacional de Bogotá para la "Academia de Ciencias"
German Democratic Republic	Institut für Landesforschung und Naturschutz
Germany, Federal Republic of	Bundesanstalt für Vegetationskunde, Naturschutz und Landschaftspflege
India	The Ecology Council, Gujarat State
Iran	Iran Game and Fish Department
Ireland	National Parks and Monuments Branch, Office of Public Works
Italy	Parco Nazionale d'Abruzzo
Pakistan	Pakistan Forest Institute
Singapore, Republic of	Singapore Zoological Gardens
Spain	Comisión de Defensa de la Naturaleza de la Diputación Provincial de Valencia
	Departamento de Biologiá y Zoologiá de la Facultad de Ciencias de la Universidad de Valencia
Republic of South Africa	Council for Scientific and Industrial Research
	Division of Nature Conservation, Provincial Administration of the Orange Free State Province
United States of America	Michigan State University
	Forest Service, U.S. Department of Agriculture
	Topeka Zoological Park
	Portland Zoological Gardens
	Denver Zoological Foundation
	Minnesota State Zoological Gardens

Membership of the following Non-Governmental Organizations was ratified by the 11th General Assembly:

Argentina	Comité Argentino de Conservación de la Naturaleza
Bangladesh	The Wildlife Preservation Society of Bangladesh
Brazil	Asociação de Defesa da Flora e da Fauna
Canada	The Conservation Council of Ontario

	The Nature Conservancy of Canada
	Metropolitan Toronto Zoological Society
	National and Provincial Parks Association
	Canadian Nature Federation
Chile	Instituto de la Patagonia
Cyprus	Cyprus Geographical Association
Ethiopia	Ethiopian Wildlife and Natural History Society
Fiji Islands	National Trust for Fiji
France	Association Nationale de Parcs et Jardins Zoologiques Privés
	Fédération Française des Sociétés de Protection de la Nature
German Democratic Republic	Central Commission: Nature and Homeland of the Deutsche Kulturbund
Germany, Federal Republic of	Deutsche Gesellschaft für Säugetierkunde e.V.
Guatemala	Asociación "Amigos del Bosque"
Italy	Associazione Italiana per il World Wildlife Fund
Japan	Japanese Association of Zoological Gardens and Aquariums
Malaysia	World Wildlife Fund Malaysia
Netherlands	Nederlandse Vereniging van Dierentuinen
	Stichting Het Wereld Natuur Fonds (Nederland) (Netherlands Appeal, WWF)
	Nederlandse Onderwatersport Bond
Pakistan	The Pakistan Wildlife Appeal
South Korea, Republic of	Korean National Parks Association
Thailand	Association for the Conservation of Wildlife
Tunisia	Association Tunisienne pour la Protection de la Nature et de l'Environnement
United Kingdom	Wildlife (World Wildlife Fund British National Appeal)
United States of America	Arizona-Sonora Desert Museum
	Atlanta Zoological Park
	Bernice P. Bishop Museum
	Friends of the Earth
	Islands Resources Foundation
	Janss Foundation
	L.S.B. Leakey Foundation
	National Society for Medical Research
	Pacific Tropical Botanical Garden
	The Research Ranch, Inc.
	University of Wisconsin, Green Bay
Venezuela	Asociación Nacional para la Defensa de la Naturaleza

Membership of the following International Non-Governmental Organizations was ratified by the 11th General Assembly:

Association of Zoo Directors of Australia and New Zealand

Instituto Interamericano de Ciencias Agricolas de la OEA

International Council of Environmental Law

Federación Iberoamericana de Parques Zoológicos

Union Internationale des Associations d'Alpinisme

International Association of Game, Fish and Conservation Commissioners

International Primatological Society

IUCN Statutes

The 11th General Assembly unanimously approved a number of amendments to the Statutes, details of which changes had previously been circulated to all members in accordance with statutory requirements.

It will be recalled that the Executive Board recommended that the Statutes should be amended for the following purposes:

1. To provide for rescission of memberships, to introduce a new class of "Affiliate Member", and to clarify certain other matters relating to membership.
2. To limit the number of votes that national organizational members from any one country can exercise to a maximum of ten percent of the voting rights in the non-governmental category.
3. To enlarge the membership of the Executive Board and to provide for a greater geographical spread of representation, to rationalize the provisions for staggering the terms of office of members of the Executive Board, and to provide for the possibility of extending the term of office of a member of the Executive Board who is to be re-elected as Vice-President.
4. To provide for the constitution of the Executive Committee.
5. To provide for the election by the General Assembly of Vice-Chairmen of Commissions.
6. To change the designation of the chief executive officer of the Union from "Secretary-General" to "Director-General".

Honours

The John C. Phillips Medal for Distinguished Services in International Conservation was awarded to H.R.H. Prince Bernhard of the Netherlands. The Citation reads:

"To His Royal Highness The Prince of the Netherlands, Prince of Lippe Biesterfeld, for his outstanding and selfless contributions to conservation, particularly in developing public awareness of conservation issues and ideals, through his inspired guidance as President of the World Wildlife Fund since its formation, and his untiring participation in its splendid achievements in conservation action as well as his leadership of The 1001 – Nature Trust formed under his auspices. His personal dedication and devotion to the cause of conservation throughout the world have qualified him as a notable 'Conservation Statesman'."

The Order of the Golden Ark was awarded by H.R.H. Prince Bernhard to Mr Harold J. Coolidge, President of IUCN.

H.R.H. Prince Bernhard also presented the WWF Gold Medal to Professor A. G. Bannikov, USSR. The award of the WWF Gold Medal to Professor Bannikov was announced at the inauguration of the Luis Bolín Laboratory in the Doñana National Park on 27 May, 1972.

Honorary Membership

Mr Harold J. Coolidge was appointed an Honorary Member with the title Honorary President in appreciation of the special contributions that he has made to the development of the Union. He took part in the historic event at Fontainebleau when the Union was founded in 1948 and has devoted himself to the affairs of the Union ever since.

He has served IUCN in many capacities, culminating in his outstanding six years of office as President which marked the expansion and strong development of the organization that now exists and which has received wide recognition and appreciation.

Professor Jean-Paul Harroy also was appointed an Honorary Member of IUCN by the General Assembly, in recognition of the devoted service given to the Union by

him in the compilation and production of the United Nations List of National Parks and Equivalent Reserves, as Chairman of the International Commission on National Parks, as the first Secretary-General of the Union, and in many other ways. Jean-Paul Harroy is one of the pioneers of the conservation movement who has devoted himself to conservation action throughout the world. He had a special responsibility for national parks in Africa and has given help and advice to many governments in the creation and improvements of their national parks systems.

Excerpts from the Address of Welcome by the Honourable Jean Chrétien, Minister of Indian Affairs and Northern Development

It is with great pleasure that I welcome the delegates to this 11th General Assembly of the International Union for the Conservation of Nature and Natural Resources to Canada, and in particular to Banff National Park. Canada became a member of the IUCN only three years ago and therefore we consider it a special privilege to be your host.

Until recently, the majority of people may have considered it unnecessary for an immense and sparsely populated country like Canada to be concerned about the conservation of its natural resources. After all, Canada is the world's second largest country and supports a population of only 22 million people mostly located along the southern fringe.

But the ever-encroaching developments of the 20th century have taught us as well as others that the resources of the earth which we all share are not limitless but finite. . . .

The IUCN was one of the first bodies to focus attention on this global problem of conservation. You have defined conservation as "the rational management of the earth's resources to achieve the highest sustainable quality of living for mankind." I thought you would be interested in knowing of recent developments toward the goal of rationally managed conservation here in Canada.

A federal Department of the Environment has been established whose assistance, expertise and pressure are now having a real effect across the country. This co-ordinating agency brings together the work of all departments as well as the provinces, universities and industry and opens the way to decisive action in this field.

In the development of Canada's North for which I am responsible, we are finding a new balance between economic development, social needs and environmental protection. Tough legislation has been passed to protect the northern inland waters and the Arctic Ocean from pollution. Regulations controlling land use are in effect in our northern territories. And I am convinced that we must proceed with the development of the oil and gas potential of the North in a way which will be a model for others to follow. The environmental and social guidelines which we have issued show that we mean what we have been saying.

As you all know National Parks are an important aspect of environmental protection. Here in Canada we have a first class chain of National Parks which began right here in 1887 when an area of ten square miles was set aside. This is one of the pioneer National Parks of the world. When it was created there was criticism that it was too remote to be useful, too distant to be sensible. Today, as you can see, it justifies the foresight of those who created it.

By 1968 millions of people each year were coming to Banff. Indeed visitors were pouring into all our National Parks. Development was steadily encroaching on suitable park sites and only two new parks had been created in the previous 30 years.

The challenge was very clear. We had to expand our parks system and we had to take further steps to protect the parks we already had set aside. We are proud of our record of the last four years. We have created 11 new National Parks including three in Canada's North. We now have 29 and the area set aside for National Parkland in Canada has been doubled. For the first time we have major parks in all our provinces and in both Northern Territories. . . .

Just recently I had to reject a proposal for a large development at Lake Louise. As I said at the time, "where there is room for doubt, priority must be given to park values; we must err on the side of protection."

We are working towards the establishment of marine parks. We are surveying wild rivers for their park potential. We are integrating historic and recreational canals into our parks network. We are looking at new ways to provide outlets for those who seek enjoyment in the scenery and peace of the outdoors.

We have to develop parks near to large centres of population. The Montreal-Toronto-Windsor area of Canada has half the population of the country and a large National Park near there would be a superb asset. We need to integrate our plans with provincial plans so that a total parks system emerges to serve the people.

The future of parks lies in the will of the people. Organizations such as yours help to focus on the advantages of conservation, on the reality of the need for more parkland, for the balanced and controlled development of resources.

Canada has much to learn from the experience of other countries on the subject of the conservation of nature and natural resources. The Government of Canada is proud that the IUCN is meeting in Canada. We commend your valuable and pioneering work in the past. As the Minister responsible for this park, I am proud to welcome you to Banff National Park. I wish you well in your meetings.

Extracts from the keynote address by Maurice Strong, Secretary-General of the United Nations Conference on the Human Environment

In its 24-year history IUCN has established itself as one of the principal pioneers of the international movement to improve man's understanding and his management of his relationship to the rest of the natural world. Your membership – drawn from more than 70 countries, including governments themselves – clearly bears testimony to your broad international character and your growing vitality. This was evidenced particularly in the extremely valuable and effective contribution which IUCN made to the United Nations Conference on the Human Environment both during the preparatory period and at the Conference itself, where your very able Director-General, Mr. Gerardo Budowski, made such a compelling statement to the Plenary.

I want to take this opportunity to express the official thanks of the United Nations and of the Conference Secretariat for your support and assistance. It meant a great deal to us. . . .

The immediate importance of the Stockholm Conference may well be that it marked the first time that the nations of the world collectively acknowledged that something had gone wrong with the way in which man had been managing his own development, that this was already creating serious problems in many areas, and that it pointed up doubts and risks which could affect the fate of the entire human species. But the long-range importance of Stockholm, I believe, will be found in the kind of actions to which it gave rise in changing the perceptions, the attitudes and the practices which are responsible for the present dilemma. . . .

. . . Stockholm made clear the greatest imbalance of all is the great and growing disparity between the condition of life enjoyed by the privileged minority who

monopolize the benefits of our technological civilization and the grinding poverty which afflicts the environment of the majority of the world's people.

Without question the dominant theme of the environmental era is interdependence – the interdependence of each of the myriad elements and the physical systems which sustain our life with other elements in the system and with the health of the whole system – the interdependence of man with the entire physical system which comprises the natural world – and the interdependence of the physical system with man's own economic, social and value systems.

Today the scale of these interdependencies is global. For now that man's intervention in the natural world can – and has – become a principal determinant of his own condition, his interdependence with his fellow man must assume the global dimensions which accord with the reality that the physical world is a single, unitary system embracing the entire earth and whose life-supporting systems are threatened as at no time since man began to reconstruct and reshape his planetary home.

To go forward from here will require a greater degree of collective wisdom, self-discipline and cooperative action than man has ever before demonstrated. It will require too, revolutions in attitudes, in values, in social and economic behaviour with corresponding revolutions in the political process and the structures and institutions through which we govern our societies. Above all, perhaps, it will require a much higher degree of management and control of the activities by which we are shaping our own future than anything we have yet experienced. . . .

New patterns of organization must be based on a multitude of centres of information and of energy and of power all linked together within a system in which they can interact with each other.

. . . it is my hope, that in development of the new organizational machinery to deal with environmental matters within the United Nations, we may help the task of pioneering this concept of ecological management. This means that we must learn to identify the centres of knowledge and competence both within the United Nations family, within national jurisdictions and within the non-governmental community, help to link them together as part of a functioning network through which information required for decision-making flows to those who need it in the forms in which they can use it and in which particular tasks are carried out by those most able to do them. . . .

In developing the programme within the United Nations in the environmental field and in administration of the new environmental fund, I would like to see high priority given to the development of this kind of a network of institutions and to the support of individual institutions which are best designed to play important roles within the system as a whole.

Here the role of IUCN can be absolutely crucial. Not only have you established your leading position in the environmental field but you have demonstrated the capacity to work with both the scientific community and the non-governmental community. You have broadened your orientation beyond the more limited concepts of conservation without yet succumbing to the temptation of trying to be all things to all people.

Permit me a word of caution, however. One of the real problems that all organizations like yours will face in the future is the difficulty of confining yourselves to particular functions in which you can develop high standards of capability and excellence, while developing your awareness of the larger context in which your activities are carried out. There is always a temptation to widen your activities as your vision widens. Dealing with such temptation will require much wisdom and self-discipline on behalf of energetic and enthusiastic organizations like yours.

Extracts from the Address by Mr. Harold J. Coolidge, President, IUCN

. . .The theme chosen for the technical meeting associated with our General Assembly is "Conservation for Development". We are fortunate to hold these discussions in Canada which is justly renowned for its magnificent natural resources and for the wise way it is now organizing for their management and utilization. . . .

The rising awareness of the importance of national parks is reflected in the impressive increase in new national parks created over the past five years – almost 20% more than described a few years ago in the United Nations List of National Parks and Equivalent Reserves.

This interest is crystallized in the Second World Conference on National Parks that will take place in Yellowstone and Grand Teton National Parks immediately after our gathering here in Banff. Participants from some 85 nations will exchange views on organization, operation and management of national parks. IUCN is proud to join with the U.S. National Parks Centennial Commission and the National Park Service of the Department of the Interior in sponsoring this most important conference.

The International Union for Conservation of Nature is officially a non-governmental organization, but has been termed "a unique hybrid" with governmental and non-governmental membership from 70 nations. We have also been for our first 24 years the *sole international body concerned totally with environmental matters!* . . .

The definition that we adopted for the term "Protection of Nature" was "the preservation of the entire world biotic community or man's natural environment which includes the earth's renewable natural resources of which it is composed and on which rests the foundation of human civilization." It is most gratifying that the Union's objectives which involve conservation of wildlife, soils, water and natural areas of scientific, historic or aesthetic significance through legislation, research, education and international conventions have in part furnished a blueprint for the substance of several important resolutions at the recent U.N. Conference on the Human Environment in Stockholm.

. . . the development of the plans for the Stockholm Conference has caused an exponential rise in general world interest and concern over the health of the environment, which corresponds with the growth and expansion of IUCN activities in association with WWF over the past ten years. This growth started with "protection of nature" and came to include broader based conservation involving health of the total environment, quality of life, and problems of population and progress and pollution.

The UNESCO Biosphere Conference (1968) stimulated the establishment of specific offices within governments to handle the environment initiated by the United States in 1969, followed by Japan, Canada and five European countries in 1970, and currently 113 nations in 1972. Stockholm must therefore be thought of as part of a continuum of actions reflecting the fact that the environment has become a matter of significant international concern and will be increasing so in the years ahead. . . .

Finally, speaking on a personal basis I would like to express my strong belief in the bright future of IUCN, and my appreciation for the privilege of having served in various posts as an officer of the Union over the past 24 years during which those involved with Union activities have given me most loyal support!

I hope that the years ahead will see a close linkage between the social sciences and the biological sciences in environmental matters, which regretfully does not as yet exist. I also trust that religion, the arts and humanities, including especially music, will play a growing role in our joint ethical, cultural, and educational efforts in order to integrate increasingly man with nature, and help to promote "respect for life" as a contribution to the ecosystem of the magnificent "Blue Planet" – *Our One and Only Earth!*

Extracts from the Address by the President-Elect, Professor D. J. Kuenen

Environmental awareness started as a small trickle, but has gradually grown into a river in full spate, sweeping before it many hitherto unquestioned assumptions about progress, quality of life the future of mankind and the values by which to judge our ideas and actions.

The force has been sufficient to move the United Nations into action, resulting in the successful Conference on the Human Environment in Stockholm in June of this year.

Because of the increase of involvement of our Union's special concern within the larger issue we must again assess our data and our errors; our thoughts, plans and hopes, and see whether we need to establish new bearings for the course to be taken in the next few years.

It is no easy task to do so and it is made more difficult by the exponential growth of printed papers on the subject. Unhappily this does not reflect a parallel increase in knowledge, which is advancing only slowly.

On the environmental issue we are confronted with facts, with theories, with conjectures, with fantasies, and with downright deceit.

Facts are perhaps not abundant but quite sufficient to warrant alarm. We know about extermination of plants and animals, about cutting down of forests and reclaiming of wetlands, about pollution and the destruction of biocoenoses, about urban sprawl and remorseless exploitation of resources.

Theories are essential as binding material for loose facts. It is mainly the study of ecology which has supplied us with much of the necessary background to interpret what we observe. We could wish that ecological theories were more precise. Ecological processes cannot be described by deterministic mathematical models; stochastic formulae give us the probabilities that a certain further development will take place.

But even with uncertainties about quantities, the final outcome can be predicted with certainty. What happens in a population where negative feedback systems are impaired, when sources of material are depleted, when flow of energy is interrupted or species are eliminated and niches left vacant; all this can be stated beyond reasonable doubt. These facts can be presented as a picture of what man and his environment will look like if the rules of ecology are not respected. If they are presented in the right way we will be heard. If the world will listen we may be understood.

Conjectures are the essence of scientific thought. They are necessary for scientific discussion and developing ideas. They can be dangerous if expressed at the wrong time and in the wrong place. They may then be interpreted as final assumptions.

Deceit is practised by those who are more interested in their own short-term well-being than in the future of our community. They seek comfort now at the cost of disaster and the ultimate chances of survival for all in the future. Those who withhold information which is valuable, those who deliberately distort facts to serve private ends, those who wilfully destroy nature for their own benefit without regard for its long-term value, who exploit resources now and prevent greater benefits to be reaped later, cannot escape the judgement which later generations will ultimately pass upon them. Perhaps the most dangerous are those who pretend to be worried about the environment but are in fact only worried about their own pursuits. That is where the greatest danger for us all lies because it undermines the trustworthiness of our common cause.

The IUCN has its own role to play on this spectacular stage, in a play with a most complicated plot. We collect and publish data, we stimulate research and we supply facts for further theoretical considerations. We sometimes indulge in conjecture, but only to bring to the notice of others what are the expected consequences of their actions. Only when we succeed in remaining a reliable source of information will we be able to achieve that for which the Union was founded, nearly 25 years ago.

This does not imply that we have to be pure rationalists without emotional feelings as regards nature, wild animals or plants.

The scientific community shows a reassuring consensus as regards the problems of the environment. The recommendations from the Stockholm Conference were largely due to the concerted efforts of a number of scientists and international scientific unions, working within the framework of the United Nations. Many petty differences had to be overcome, some major issues were not solved and quite a number of recommendations were weakened during the debates, but the overall results are positive and heartening.

We believe that nature conservation is all important. But we do realize that it is part of a much larger and very complex problem which has to be solved. Integration of all aspects of the environment will need a lot of thinking and the process requires a wider scope than pure conservation aspects alone. Economics, town and country planning, population control, food production, sociological considerations and above all education are necessary aspects of this integrated approach.

All this will require, apart from the statement of facts, the judgement of values. It is here that the fundamental changes in our ways of thinking are necessary. We can no longer evaluate by standards of money value alone, as has long been the custom. We must reassess our values and thereby restructure our future, and that is a formidable task. The MIT studies, performed at the instigation of the Club of Rome, which have resulted in a functional World Model and in the study of the Limits of Growth, have shown us that the major factors which are involved in our future are intricately inter-related. Changing only one will never lead to an acceptable solution. But to be able to determine the exact way in which they should be steered together will still need a great deal of study.

The new slogan for the world must be: "Specialists of the world unite!" Until recently the specialist was the expert who by himself could solve a problem. This concept has now to be abandoned and replaced by the realization that we shall need collaborating groups of specialists for each major problem.

IUCN is one of those specialist groups. We have our own aims but these must always be viewed as part of the overall effort.

IUCN is worried about the deterioration of the environment, about the threatening extinction of species, about the lack of educational effort, about the difficulties in legislation, about the preservation of natural areas, about the destruction of landscape. We know that we have the responsibility to keep other species than our own alive. They are unique in evolutionary history and we do not have the right to destroy them.

There is the danger that we may gradually become so diversified within ourselves that the Union can no longer function as a unity. We must take care that the specialists inside the Union continue to be a functional part of the totality.

As in so many cases, amateurs started the idea of the Union and the Organization. Most of them did other work in the first place and could only spend a part of their time on matters with which IUCN is concerned. As the movement gathered impetus, more and more professionals had to move in. Some people regret this and even fear this development.

I believe this attitude to be wrong. If an organization outgrows its original structure, adaptations must be made. Full-time workers become a necessity to ensure efficiency and continuity.

Many universities now train conservationists. We must create the possibilities for such young people to devote their entire time to the application of this knowledge and the deepening of their insight in this highly complex matter.

There is no time to be lost. Only when the material problems are solved in time, will there be scope for cultural values to be fully developed; but only if we keep our cultural values intact, will there by any sense in solving our material problems.

If we succeed in saving nature and its resources we can have an environment in which we may succeed in saving ourselves.

Book reviews

Meadows, Dennis L. (with a team of MIT researchers) (1972) : The Limits to Growth : A report for the Club of Rome's project on the predicament of mankind. London: Earth Island; 205 pp., £1.00.

The essential message of the book is this: if present-day trends in worldwide growth of human population, resource use, food consumption, industrial output, and pollution continue unchanged, humanity in three to four generations will have destroyed so much of the natural system on which its life and civilization depends that a drastic reduction in population, standard of living and environmental quality will inevitably occur.

It may be no exaggeration to say that more than any other environmental book, this popular account of the behaviour of a world model has shaken the ruling elites into awareness that something may be fundamentally wrong with economic growth, 'development', industrialization, and related sanctified goals of developed and developing countries. How come?

Many other publications have carried the same basic message before. The specific impact of the Meadows report probably is due to its unique "marketing mix": the fame of the MIT, the use of a dynamic computer model, the novelty and the daring inherent in the "world system", the demonstration of the complex interrelatedness of all those major environmental factors that one has read about individually, the seeming inescapability of impending doom to which all model variations are leading, the excellent timing of the report, the simultaneous translation into many tongues, the easy-to-read language, and probably also the personal presentations given to high-level groups by the leaders of the Club of Rome.

A measure of the book's impact is given by the numerous critical reviews it received. Some criticism was excessive, indicating that the readers somehow felt hit where it hurts: in basic belief. Interestingly, much criticism was addressed to details of methodology. This appears premature, because the technical account of the model has not yet been published.

Symptomatically, many of the severe critics are economists. As environmental economist E.J. Mishan points out in the "New Scientist", economists generally do not welcome a book that threatens to damage their credibility as custodians of society's material wellbeing.

A similar reaction might be expected from those who are responsible for making and implementing economic policy: the governments. In the light of a threat that appears at least as dangerous to future humanity as general thermonuclear war – the destruction of the biosphere by economic and technological progress – the present governmental environment policies look like mere tokenism.

It is true that important, but hard-to-quantify factors such as human adaptability, and cultural and social value changes were not included in the world model. It is also true that the model does not take into consideration the large differences between countries and people. The authors themselves point out still other crudities.

Yet the imperfections of the reports are outweighed by the importance of its basic message, and by the fact that a beginning has been made in a unique and necessary method of looking at the "Only One World". This method is based on important facts hard to analyze except by systems analysis: the biosphere is a single, closed system (a continent or country is not); the components of the system (population, resources, etc.) are interrelated in complex ways (most environmental studies do not bring this out sufficiently); systems change their behaviour as a function of time (static descriptions retain only one instant in time and therefore do not give a sufficient account of reality).

In summary, quite a report. Not a manual for environmental policy action, but if read by the world's policy makers, it should go a long way toward bringing about the quantum jump needed to redirect human activities toward long-term stability, away from short-term goals for apparently cancerous growth.

John A. Staub

Wiggins, Ira L. & Porter, Duncan M. (1971) : Flora of the Galapagos. Stanford, California: Stanford University Press. 998 pp., $37.50.

This is a remarkable book covering an area that has needed much more comprehensive treatment than it has hitherto received. It will be particularly useful to students of ecology, and will assist many of the conservation programmes now planned or under way in the islands.

The book falls into two parts: a lengthy and useful introduction; and the main bulk which is devoted to the descriptions of the plants, including the ferns. An excellent glossary of botanical terms, more than 200 literature references and a superb index compiete the work.

The introduction describes the area studied – 45 islands and rocks and groups of islands (more than 3000 m² in surface area) that comprise a total area of 7856 km². Both the English and Spanish names of all the islands are given and their major characteristics are described. There is a section on the settlement pattern of the few inhabited islands, but some comments are unnecessary – and sometimes unqualified. For example on p. 7 "[San Cristobal] island has perhaps the greatest agricultural potential of all the islands in the group, for the soil is good and the lake at El Junco (the Place of the Sedges) might support limited irrigation if careful schedules for its use are developed." Even though employed 'in passing', such statements may have dangerous consequences. Have the authors considered alternative uses for the islands, some which do not involve agricultural expansion and might contribute much more to the welfare of the local people. Ecuador and the cause of science, education and even economic growth? For instance, those based on carefully regulated tourism? Obviously such loaded commentaries, applied to areas where conflicts of land-use are prevalent, should not be made or repeated by scientists for a field that is not their own.

Short sections on physiography, climate and soil, lead to the main part of the introduction, the broad description of the vegetation of the area complemented by 96 colour photographs, some of them landscapes and animals. The photographs are beautiful, but some of the captions are clearly incorrect. Plate 3, for example, shows the view one has of the Charles Darwin Station (on the right) near Puerto Ayora on Santa Cruz, and not Wreck Bay, San Cristobal. In Plate 26, referred to in the text (.p 227) as illustrating *Avicennia germinans*, it is not clear which this species is.

The authors divide the islands into six vegetation zones, of which the last five are principally climatically determined: littoral, arid, transition, *Scalesia*, *Miconia*, and fern sedge.

A brief section on the fauna is included. It might have been improved by deleting sentences such as "They [the land iguanas *Conolophus*] move more rapidly than the marine iguanas, and were not observed swimming by any of our groups in either 1964 or 1967."

The threat from feral animals is correctly stated; in fact important action has been taken in the last few years by the Charles Darwin Foundation, largely due to World Wildlife Fund support. A very useful section on the history of botanical collections and the arrangement of the work, as well as the names of the specialists who contributed, completes this remarkable introduction of 52 pages.

The systematic treatment is detailed, with keys to the families, genera and species, and handsomely complemented by drawings as well as selected distribution maps. One may wonder why balsa *Ochroma pyramidale*, a tree introduced not long ago in Santa Cruz, was honoured with a distribution map. Unfortunately, local common names have been completely ignored.

It should be noted that out of a total of 702 taxa, including 60 subspecies and varieties and 77 recently introduced taxa "that have escaped from cultivation and are reproducing themselves spontaneously", 228 or 32.5% are endemic. It is of course this high percentage of endemism which makes the Galapagos Islands so unique. The authors themselves are responsible for 42 new records.

The basic groundwork has now been laid for a variety of derived studies, one of which must surely be a bilingual popular illustrated pocket-book on the most common plants of the Galapagos with, hopefully, some notes on their relationship with the unique fauna.

Gerardo Budowski

Heinzel, H., Fitter, R. & Parslow, J. (1972). The Birds of Britain and Europe, with North Africa and the Middle East. London: Collins. 336 pp., £1.50.

This is the first book for the identification of all the birds of Europe, North Africa and the Middle East: over 1000 birds in all. Each species, distinct subspecies and notable distinction of plumage has been illustrated by a separate painting executed specially for this volume. Opposite the paintings are concise descriptions, which stress the characters most useful for identification in the field. On the same pages are regional maps giving the breeding, wintering and passage ranges, and at the back of the book are a further 240 maps of the British Isles showing the ranges of all the 200 regularly breeding species, and the regularly occurring winter visitors and passage migrants.

J. Lucas

Fryer, G. & Iles, T.D. (1972) : The Cichlid fishes of the Great Lakes of Africa: their biology and evolution. Edinburgh: Oliver & Boyd; 641 pp., £12.

Each of the major African lakes – Victoria, Malawi and Tanganyika – has its own fauna of over a hundred different species of cichlid fishes, most of which are found nowhere else in the world. They are of particular interest to biologists because the species have evolved independently in each of the lakes and yield valuable information about the mechanisms of evolution. They also form a very valuable article of diet in many parts of tropical Africa, and indeed in the other parts of the world to which they have been introduced.

This book, which is likely to be the standard work for a long time to come, deals first with their environment, then proceeds to cover their feeding, breeding, predators and parasites, inter-specific relationships, and other genetic and ecological phenomena. The fisheries are treated in depth, and are of particular interest to the conservationist as classical examples of rapidly increasing over-exploitation, despite efforts at fishery regulation in the past three decades. Finally, four chapters deal with the evolution of the lakes and the ecological niches which the cichlids exploit.

J. Lucas

Everhart, W. C. (1972) : The National Park Service. New York, Washington, London: Praeger; 275 pp., $(US)9.00.

During this times, when books about government institutions are ghosted to enhance the image of the 'Chief' and gather either public or congressional support, it is refreshing to come across one without such a devious purpose.

This book is the story of the 100 years of the National Park Service of the USA. Not the only story, not even all of the story, but simply and powerfully written by one competent to tell it at first hand. After describing how the service came into being and was organized, the author deals with topics such as the matter of protection; concessions; life in a National Park; relationships with Congress, other federal agencies and with conservation organizations; and looks to the future. Appendices cover career opportunities, and the US national park system. There is a selected bibliography.

H.A. Goodwin

Herbert, H. J. (1972) : The population dynamics of the waterbuck* Kobus ellipsiprymnus *in the Sabi-Sand Wildtuin.

Mammalia Depicta, Beiheft 7 zur *Zeitschift für Säugertierkunde*. Hamburg and Berlin: Verlag Paul Parey; 68 pp., 36 figures. DM 34.

This study attempts to elucidate the reasons for the alarming decrease of the waterbuck in the Sabi-Sand Wildtuin and the adjoining Kruger National Park. Contributory factors could include habitat change, predation and disease, and in fact it seems that habitat change is the key. The area is becoming increasingly dessicated due to extraction of water from the Sand River and this is causing shrinkage of the area of riverine vegetation, which in turn is limiting the food and shelter available to the waterbuck.

However, an accessory feature is that in the past the Bantu, in burning, clearing, planting, and stock grazing operations, kept the area in a park-like state. These activities have been curtailed and encroachment of bush has occurred, favouring impala, kudu and giraffe. The author suggests that greater levels of water should be permitted to flow into the Sabi-Sand Wildtuin from the Sand River; that bush clearing operations are continued and accelerated, that the impala cropping scheme is increased; and that more studies should be carried out on predation, although no organized predator control should be introduced.

J. Lucas

Heyerdahl, Thor (1971). The Ra Expeditions. New York, Doubleday; also in London, Georges Allen and Unwin; 340 pp., 111 photographic illustrations in colour, $10.00 (US).

We all know that that Kon-tiki man has done it again, impressively. Since his Pacific days, the author has become more aware of biology in general and conservation in particular. His reports of oil all across the Atlantic, made from this trip, have attracted world interest. Elaborating at a Senate hearing in Washington, he specified seeing great amounts of drifting oil for no less than 40 of the 50 days it took the raft to cross from Africa to the Caribbean. As he then says (9 November 1971):

"I feel there is a great danger we shall end up with a lot of talking and no action. We aren't talking about aesthetics. We are talking about human survival."

It is a pity the Ra people could not keep more precise records. The danger is that the talk is too diffuse, too much. In any case, these diffuse, supranational oceanic problems raise special urgencies and difficulties. We are a long way from solving them.

Prof. Tom Harrisson

International Union for Conservation of Nature and Natural Resources
1110 Morges, Switzerland

Resolutions of the 11th General Assembly of IUCN

Banff, Alberta, Canada
16 September 1972

1. Stockholm Conference

Considering the vital importance of the United Nations Conference on the Human Environment (Stockholm 1972) in focussing national and international attention on environmental issues;

Having studied the Declaration and the Action Programme adopted by the UN Conference at Stockholm;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Endorses the outcome of the UN Conference at Stockholm;

Expresses the hope that the UN General Assembly will adopt the recommendations of the Conference and will establish the necessary machinery to carry these recommendations into effect;

Warmly congratulates the Secretary General of the Conference and his Secretariat for their preparation and handling of the meetings;

And assures the United Nations that IUCN will assist in all ways possible in carrying into effect those aspects of the Action Plan of Stockholm that are within its special competence.

2. Conservation of the World Heritage

Recalling proposals by conservationists for the recognition of outstanding natural and cultural areas as constituting the World Heritage and the initiatives taken by UNESCO and IUCN in this connection;

Being aware of the draft convention on conservation of the World Heritage that will be considered by the General Conference of UNESCO in Paris in October/November 1972;

Noting the endorsement of this draft convention by the UN Conference on the Human Environment (Stockholm 1972);

The 11th General Assembly meeting at Banff, Canada, in September 1972:

Calls upon all governments to adhere to the convention on the Conservation of the World Heritage;

And urges governments to give the widest publicity to the concept of the convention and to take action to enable potential sites to be designated as soon as possible.

3. Convention on the Conservation of Wetlands

Recalling the successful initiative of the Government of Iran in securing agreement of governments to the Convention on Wetlands of International Importance considered by the International Conference on Wetlands held at Ramsar in January 1971, with the active participation of IUCN;

Being informed that the resulting convention has now been opened for signature at UNESCO headquarters in Paris;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Calls on governments represented at Ramsar to sign and ratify the convention as soon as possible;

Urges all other governments to consider early adherence to the convention;

And draws attention to the need for including within the scope of the convention suitable areas of high-quality *Sphagnum* peatlands, as being a very widespread type of wetland under threat of drainage, with possible adverse ecological effects and doubtful economic justification.

4. Man and the Biosphere Programme

Being aware of the development of UNESCO's Man and the Biosphere Programme and its close relationship with the work of IUCN;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Welcomes the MAB Programme and the steps that UNESCO is taking to ensure the fullest possible use of IUCN's on-going projects and potentialities in carrying out several of the MAB projects and the supporting activities, including those concerned with environmental education.

5. FAO Activities in Environmental Issues

Being informed of the increased emphasis by FAO in its programmes on environmental topics, particularly through studies of the marginal lands and national parks in Africa and Latin America, soon to be extended to the Middle East and South-East Asia;

Appreciating the activities of FAO in relation to training in wildlife management and national park operations in Africa and Latin America;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Commends the prominence now being given to environmental issues in FAO programmes;

And expresses the hope that FAO will continue to maintain close liaison with IUCN in this field.

6. Ecological Principles for Economic Development

Considering the many examples brought before the 12th Technical Meeting of IUCN of the damage caused by continuing failure to ensure full advanced study of forseeable environmental impacts of new development projects involving disturbance to, or encroachment upon, natural environment, for example in several Arctic lands, in the Amazon and Mekong Basins, in southern British Columbia, and in the Montana/Wyoming coalfields;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Invites all sponsors of major development projects to ensure, and all governments concerned to require, that comprehensive and competent scientific and technical evaluation of relevant ecological factors normally be made publicly available as a prior condition before any such project be accepted and acted upon;

And draws attention to the usefulness for this purpose of the forthcoming publication by IUCN and the Conservation Foundation entitled *Ecological Principles for Economic Development,* which has special reference to the tropics.

7. Conservation and Development of Tropical Rain Forests

Recognizing that present and planned agricultural, grazing and forest exploitation activities, sometimes involving agrarian reform schemes, are resulting in major impacts on tropical rain forests and often lead to their complete disappearance and replacement by secondary communities, thus depriving the countries concerned of a valuable potential resource;

The 11th General Assembly of IUCN meeting in Banff, Canada, in September 1972:

Urges all governments to recognize:

(1) that all development programmes which involve the manipulation of tropical rain forests should be based upon ecological analysis and principles and the application of appropriate technologies that can result in a sustained yield from the resource with minimum adverse effects upon the environment;

(2) that the governments of those countries in which companies extracting timber from tropical forest lands are based, should exercise increased controls over the operations of such companies undertaken abroad to oblige them to take all the precautions that would avoid the degradation of tropical forest ecosystems; *

(3) that important and unique areas within tropical rain forests should be set aside for management as national parks, sanctuaries and reserves to insure the conservation of representative natural formations and species, as well as genetic resources;

(4) that critical areas within tropical rain forests such as upper watersheds, riverine and estuarine zones, slopes and areas subject to accelerated erosion be given special treatment including the restriction of harmful land-use practices, and the use of reforestation or other protective measures; and

(5) that countries with large tropical timber resources be given financial assistance by appropriate national and international agencies to help maintain their forest resources.

8. Balanced Tourism

Recognizing that, despite the fact the tourism has often been responsible for encouraging conservation activities in many parts of the world, expanding tourism is resulting in increasingly severe damage to the environment, including fauna and flora;

Knowing that many tourist and travel interests have often neglected the responsibilities inherent in their profitable exploitation of environmental resources, and failed to respond to invitations to participate in coordinated efforts towards reducing environmental impact, as formulated at the 4th Technical Meeting of IUCN at Salzburg in 1953, and subsequently;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Reiterates that IUCN is willing to cooperate with international tourist and travel organizations by providing ecological and other technical advice on reducing the adverse environmental impact of tourism;

And invites governments of countries which send out, or receive, mass tourist movements to call urgently for reports from their national tourist and travel organizations specifying concrete programmes which they will follow for securing ecological and other technical advice, and for modifying their plans and actions so as to deal with adverse impacts of tourism on the environment.

* Attention is also directed to the handbook on long-term contracts for forest utilization prepared by FAO.

9. Oil Exploration in the Mediterranean

Considering that exploitation of off-shore petroleum often results in leakages, forming oil slicks which are destructive to the flora and fauna of the open sea and coastal zones, and to recreational values;

Considering the ecological importance of pelagic and littoral flora and fauna in relation to the trophic chains responsible for marine productivity;

Considering also that the Mediterranean shores through their beauty and mild climate are important centres for international tourism;

Considering further that the conservation of the natural ecosystems and the perpetuation of recreational values of these areas are incompatible with the existence of polluting industrial installations;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Urges all responsible authorities in Mediterranean countries to demand compliance with the most stringent regulations designed to prevent spillage, leakage and consequent oil pollution by concessionaires and others involved in oil exploration and exploitation.

10. Ecological Considerations in Planning Boundaries of Parks and Reserves

Recognizing that an important objective of national parks and related reserves is the conservation of natural populations of animal species which provide information on the functioning of natural, unaltered ecosystems;

Believing that the information thus obtained is essential for the planning of national economic and social development projects;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Recommends that in the establishment of major reserves and national parks no effort be spared to establish boundaries on the basis of ecological considerations, so as to preserve complete ecosystems and maintain viable populations of any important species of wild plants and animals which they may contain;

And further recommends that the boundaries of existing parks and reserves which have been established without regard to ecological criteria be adjusted to conform with such criteria.

11. Marine Parks and Reserves

Welcoming the active interest in many parts of the world, notably the Caribbean, the Mediterranean, the Tanzanian and Kenyan sectors of the East African coast, the Indian Ocean islands, Australia and South Africa, in the establishment and effective management of marine and national parks;

Noting that despite the prominence given to this issue at the Symposium on Conservation in the South Pacific Region held at Noumea in August 1971 the progress so far made in this matter in parts of the Pacific region is not yet in keeping with their high scientific interest;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Urges governments concerned to promote the establishment of marine parks and reserves;

And in particular urges the Government of Fiji to take action in its archipelago of exceptional interest, where some of the reefs are under increasingly destructive pressure, and to give support to the efforts of the National Trust of Fiji in arousing public interest in this matter.

12. Arctic International Wildlife Range

Being aware of the efforts now being made in Canada and the USA to establish an International Wildlife Range in the borderlands of the Yukon Territory and State of Alaska;

Believing that the proposed area of the Range, approximately 8 million hectares, should be sufficient to make it a self-contained and stable unit, and a magnificent sample of the Arctic region of great significance not only for North America but for the world;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Commends those concerned for this far-sighted proposal;

And urges the Governments of Canada and USA to bring it to completion at the earliest possible date, so as to afford protection in perpetuity to an area of complex ecosystems of the greatest interest to science, together with its people and wildlife.

13. New Hebrides Kaori Forest

Considering that the Kaori, *Agathis obtusa,* one of the rare forest species of *Agathis,* is strictly endemic to the New Hebrides and that most significant occurrences are in the island of Erromango;

Considering that the *Agathis* forests of Erromango have other special botanical characteristics and form an ecosystem of unique scientific interest;

Believing that the Kaori is one of the most important natural resources of the New Hebrides and that its exploitation should therefore be controlled and managed on a sustained yield basis;

Being aware that current exploitation of the *Agathis* forests of Erromango is destructive and out of keeping with modern forestry practice, giving no chance of regeneration and encouraging erosion;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Urges the governments of France and the United Kingdom in view of their responsibility for the New Hebrides condominium, to establish a strict Forest Reserve of about 2500 hectares in the valley of the Lampanouri river and its tributary immediately to the west, where it could provide for the preservation of genetic stocks, and serve as a standard to enable the degraded forest to be restored to its original scientific and economic value.

14. Regional Parks in Brazil

Informed that the Government of Brazil has decreed the establishment of two regional parks of unique ecological significance: Cardozo Island, near the coast of the States of São Paulo and Paraná, a tropical area of 8,000 hectares having archeological, biological, and marine importance, and including magnificent rain forests and most of the yet-undeveloped beaches of the region, and Vassununga, an area of 2000 hectares in the State of São Paulo, which includes the last large groves of the giant jequitiba trees *Cariniana;*

Concerned that the land to implement these decrees has not yet been acquired;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Commends the Governments of Brazil and of the State of São Paulo for their foresight in setting aside these unique and valuable areas;

And urges that the land acquisition to secure these parks proceed as rapidly as possible.

15. Protection of Wide-ranging Species

Recalling Recommendation 32 of the United Nations Conference on the Human Environment (Stockholm, 1972) calling for enactment of international conventions and treaties to protect species inhabiting international waters or those that migrate from one country to another;

Recalling also that one of the statutory objectives of IUCN is the preparation of international conventions for the conservation of nature and that several recent initiatives have been taken by IUCN in this field;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Strongly endorses the recommendation of the Stockholm Conference and the action already initiated by the Executive Board of IUCN to prepare draft treaties to protect species inhabiting international waters and migratory species;

And commends the action already taken with the governments of Canada, Denmark, Norway, the USSR and the USA to conclude a draft Protocol on the Conservation of Polar Bears, which should lead eventually to a more comprehensive convention on this topic.

16. Conservation of Marine Resources

Being concerned that industrial fishing may result in dangerous depletion of marine resources, particularly marine mammals, inhabiting international waters by over-exploitation and through pollution and other environmental disturbances;

Believing that these resources should be treated as international property and as such should be subject to fully international control;

Supporting the recommendations of the United Nations Conference on the Human Environment (Stockholm 1972) relating to such resources, particularly the whales;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Recommends that the United Nations should institute measures to bring marine resources inhabiting international waters under fully international control;

Urges all nations to modify fishing operations carried out by their nationals, so as to avoid destruction of porpoises and other small cetaceans caused by unacceptable fishing techniques;

Stresses the need for further conservation measures for threatened species of marine mammals, particularly national measures for those species inhabiting coastal waters;

Urges all organizations concerned to examine rigorously the permitted quotas for all marine live resources, especially whales and seals, and to impose a moratorium on the capture of any species for which scientific evidence does not clearly support continued harvest;

And suggests that the greatest caution be exercized in exploitation of krill since the existence of many other valuable species, particularly the baleen whales, depends on this resource.

17. International Trade in Wildlife

Recognizing the initiative taken by IUCN in matters relating to the international trade in wildlife and the urgent need for international regulation of the increasing trade in threatened species of wildlife and their products;

Noting the progress being made in developing an international convention on trade in threatened species of wildlife;

Being aware that such a convention will require support from national legislation and effective enforcement;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Urges all governments to participate in the proposed intergovernmental meeting to conclude the convention to be held in Washington D.C. with target date February 1973;

And recommends that governments should introduce effective legislation to protect threatened species of wildlife, including prohibition of capture and killing and control of all trade in such species and their products, and that such legislation should be properly enforced.

18. Agreements with Industry on Use of Threatened Species

Considering the continuing depletion of threatened species of wildlife by commercial exploitation;

Recognizing the value of negotiation with industry for voluntary moratoria and other restrictions on the use of threatened species of wildlife as an interim measure pending the institution of mandatory control by governments, for example the agreement negotiated by IUCN and WWF with the International Fur Trade Federation;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Resolves that every care should be taken in negotiating such agreements to ensure that no concessions are made that would tend to be detrimental to the survival of the species or sub-species concerned;

And further resolves that any such agreements be subject to review by the General Assembly.

19. Use of Endangered Species in Research and Teaching

Being concerned that endangered species of wildlife (both plants and animals) should be accorded the fullest possible protection;

Recognizing that these species have suffered from habitat destruction, the effects of pollution, uncontrolled hunting and over-exploitation;

Realizing that the demands of biological and medical research may have unwittingly contributed to the extinction of some species or sub-species;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Recommends that endangered species taken from the wild should not be used in bio-medical, zoological or botanical research, except in crucial human health research, or research aimed at establishing the factors that are endangering the survival of the species, and then only when fully effective measures have been taken to ensure the survival of such species.

20. Use of Non-Human Primates in Research and Teaching

Recognizing the unique value of non-human primates as man's closest relatives and as models serving the biological and medical sciences in the advancement of human health and scientific knowledge;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Recommends that all governments ensure that every effort is made to conserve threatened species of non-human primates in their natural habitat;

And recommends further that research institutions, laboratories and universities take action to ensure:

(1) that the greatest care be taken to meet demands for animal material for research and teaching by choosing species of non-human primates that are not threatened, or by using other non-threatened animal species or, preferably, tissue culture whenever possible;

(2) that maximum use be made of individual animals in order to reduce demands;

(3) that threatened species of non-human primates, including all apes, are not used for bio-medical, teaching or commercial purposes except in crucial human health research, and then only when fully effective measures have been taken to ensure the survival of the species and only when other species or tissue cultures are not suitable;

(4) that breeding programmes be promoted to provide supplies of primate species for research and teaching, based on probable long-term requirements; and

(5) that in the implementation of these requirements, the highest humanitarian considerations shall apply.

21. Conservation of the Cheetah

Being aware that, despite the efforts of IUCN and others, wild cheetah populations are undergoing severe depletion through poaching for furs, live capture for zoos and safari parks, and habitat modification associated with agricultural development;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Urges that vigorous efforts be made by all countries to halt the import of cheetah skins, raw or in the manufactured state, and that the import of live cheetah by zoos and safari parks be limited to institutions which can demonstrate the capacity for long-term propagation of the species;

And invites the governments of countries with cheetah populations to undertake measures to guarantee the existence of large tracts of cheetah habitat.

22. Environmental Law

Considering the growing demand for legal assistance in regard to environmental questions, and the shortage of trained personnel in this field;

Noting the development of the IUCN multilingual system for computerized indexing of environmental law documentation;

Convinced of the importance of establishing an effective service for the exchange of information on national and international environmental law;

Noting with satisfaction Recommendation 101 of the Stockholm Conference calling for an International Referral Service for sources of environmental information;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Requests governments and agencies concerned to take part in the further expansion of the coverage of the above system by supplying personnel and other support;

And affirms its willingness to participate in the proposed referral service by providing access to the information and data available at its Environmental Law Centre.

23. Environmental Education for Professionals

Recognizing the importance of environmental education in all stages of training, including professional training in particular;

Taking into account the special role of IUCN in promoting and developing environmental education concepts and practices;

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Urges all governments and agencies concerned to institute appropriate arrangements to introduce environmental aspects into the curricula for training of professionals, especially those who will be involved in decision making and the execution of programmes having an environmental impact.

Resolution of Thanks

The 11th General Assembly of IUCN meeting at Banff, Canada, in September 1972:

Warmly thanks the Government of Canada for the splendid hospitality extended to the Union making possible the holding of this meeting in the beautiful setting of the Banff National Park;

And records its appreciation of the excellent arrangements made for its work, including the preliminary activities of the Canadian Planning Committee and the efforts of the various agencies and individuals that have contributed to the success of the occasion.